

## **DRAFT - EPA/CPG Modeling Collaboration Technical Discussions**

### **Meeting 1**

#### **Topic 1: Mapping of Sediment COPC Concentrations**

Mapping of sediment COPC concentrations onto the model grid is critical to model calibration and to projections of natural recovery and the benefits of active remediation. This mapping involves interpolation and extrapolation of point measurements. The CPG has developed an approach that needs to be critiqued by EPA. The goal is to provide EPA with a detailed understanding of the CPG approach and to engage in a technical discussion of the merits of the approach. The discussion will include detail on how the CPG's contaminant mapping approach is consistent with its conceptual understanding that is detailed in the CPG's CSM (in preparation). The meeting will be structured as follows:

- 1) CPG presentation of the approach and the results for 2,3,7,8-TCDD and other COPCs such as Mercury, PCBs and DDx. EPA would like to request the shapefiles prior to the meeting. EPA would like to see additional information regarding the interpolations:
  - The total area for each of their groups (1, 2, 3a, 3b, and 4)
  - The number of points for each of their spatial and time groups (1, 2, 3a, 3b, and 4 for ~1995 and ~2010)
  - Probability distributions comparing the five spatial groups for the two points in time.
- 2) Joint discussion of the approach, including presentation by EPA of analyses it has done regarding interpolation/extrapolation of the point data. Presentation of geomorphic zones in the LPR and interpolation in Newark Bay
- 3) Action items

#### **Topic 2: Consistency of Net Sedimentation Rates Computed by the Sediment Transport Model and Used by the Contaminant Fate Model**

The LPRSA contaminant fate model (RCATOX) relies on bed elevation changes that differ from those calculated by the sediment transport model (SEDZLJS). This difference arises as the sediment transport model results are processed and combined with the results of the eutrophication (carbon) model that predicts the generation and fate of biological carbon (i.e., algae).

The goal is to develop an action plan to eliminate the differences in net sedimentation rates. The meeting will be structured as follows:

- 1) CPG description of the issue
- 2) EPA response to the issue
- 3) Brainstorm ideas on how to eliminate the differences for volume change in all three models
  - a. Use a constant bulk density
  - b. Use a constant in time function of cohesive and non-cohesive fraction
  - c. Use a time variable cohesive bulk density that requires output of 3-D time variable bulk density to the gzm\_sedtran file (file size may be an issue)

- d. Aggregated c) to active and archive layer (computational burden -longer sediment transport run)

#### 4) Action items

Topic 3: Contaminant Fate Model Structure and Parameterization

The CPG has made several refinements to the EPA model that will be reviewed and critiqued. The EPA and CPG approaches to defining boundary conditions, carbon content, and chemical parameters will be reviewed and critiqued

- CPG modifications
- EPA modifications